UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,584	02/10/2004	Yao-Ching Stephen Chen	SVL920030107US1	9752

45727 7590 02/15/2008	EXAMINER
IP AUTHORITY, LLC	SYED, FARHAN M
RAMRAJ SOUNDARARAJAN	

4821A Eisenhower Ave	ART UNIT	PAPER NUMBER
Alexandria, VA 22304	2165	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/774,584	CHEN ET AL.
	Examiner	**Art Unit**	
	Farhan M. Syed	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>25 October 2007</u>.

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☐ Claim(s) <u>27-41</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>27-41</u> is/are rejected.

7) ☒ Claim(s) <u>27,33 and 39</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *(see Office Action)*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-26 are canceled.

2.   Claims 27-41 are pending.

Response to Amendment

3.   The Examiner acknowledges the cancellation of claims 1-26 in the Applicant's

remarks filed 25 October 2007.

Continued Examination Under 37 CFR 1.114

4.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 25

October 2007 has been entered.

Information Disclosure Statement

5.   The information disclosure statement (IDS) submitted on 25 October 2007 and

06 December 2007 is being considered by the examiner.

Specification

6.   The specification is objected to as failing to provide proper antecedent basis for

the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required:

Claims 27, 33, and 39 recite *"dummy items"*. The Examiner is unable to find

support for dummy items in the Applicant's disclosure.

Claim 33 recites *"a computer usable medium."* The Examiner is unable to find

support for computer usable medium in the Applicant's disclosure. However, the

Examiner did note in Applicant's specification, see page 17, lines 15-18, that states "an

article of manufacture comprising computer readable program code."

Claim Rejections - 35 USC § 112

7.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

8.   Claims 27, 33, and 39 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention. Claims 27, 33, and 39 recite "e.

sorting **and patching** ambiguity typing sequences with **dummy items**; f. creating a

*typing array by **concatenating** typing tuples in said sorted and patched ambiguity*

typing sequences."

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 27-41 are rejected under 35 U.S.C. 103(a) as being unpatentable by a

non-patent literature titled "An Efficient XML Schema Typing System" by Wang, Nina

and et al., pages 1-21, published 18 Nov. 2003 (previously presented and known

hereinafter as Wang) in view of a non-patent literature titled "Extending Tree Automata

to Model XML Validation Under Element and Attribute Constraints" by Bouchou B., et al,

pages 184-190, published 23 March 2003 (see Applicant's IDS filed 06 December 2007,

and known hereinafter as Bouchou).

        As per claims 27, 33, and 39, Wang teaches a computer-based method for

compiling a structured document schema into type annotation records comprising steps

of: a. building a type hierarchy ordered tree from structured document with each type

record node (i.e. *"Figure 1 shows the architecture of the XML typing module implementation. The main*

components are a Generic XML Parser, a Scanner Pool, the XML Typing engine, and an XML Schema

Compiler. The XML Schema compiler compiles an XML Schema to automata encoding storage format.")(Section 1.1) in said hierarchy ordered tree containing a typing tuple of the following format: <string_value, type> (i.e. "<element name='street' type='xs:string'/>" The preceding text clearly illustrates the format <string_value, type>.)(see Figure 2); b. creating (i.e. *"new set T is introduced"* The preceding text clearly indicates that creating is the introduction of new set T.)(section 3.1) a complete typing SET (T_s and T_c are sets)(section 3.4) which contains all typing tuples in said type hierarchy ordered tree (see sections 3.1 and 3.4); e. sorting said typing tuples in said SET by their first field, string_value (see section 3.1); d. creating, from sorted tuples in (c), ambiguity typing sequences for tuples having a common first field, string_value (i.e. "ambiguous types")(section 3.5.1); e. sorting and patching ambiguity typing sequences with dummy items (i.e. "type# + offset" The Examiner views offset with dummy items.)(section 3.5.1); f. creating a typing array by concatenating typing tuples in said sorted and patched ambiguity typing sequences (section 3.5.1); g. for each type record node, N, in created typing array, if the intersection of a set of tuples in N with any ambiguity typing sequence is not empty, then replacing first typing tuple in N by (string_n, type_n, offset>, wherein offset represents a position of an ambiguity type in a given ambiguity typing sequence (see Figure 6 for illustration of aforementioned limitation)(see sections 3.5.1 and 3.5.2); h. creating an index structure (i.e. type directory)(see Figure 9) to link each string_value to its type (see Figure 9); and i. outputting said created index structure (i.e. "runtime engine")(see section 4, Implementation Overview).

Wang does not explicitly teach hierarchy ordered tree.

Bouchou teaches hierarchy ordered tree (i.e. XML tree)(see Figure 1).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Wang with the teachings of Bouchou to include hierarchy ordered tree with the motivation to efficiently validate an XML document or document fragment against an XML Schema and annotate it with type information (Wang, abstract).

As per claims 28 and 34, Wang teaches a computer-based method, wherein said structured document schema is an XML document schema (i.e. "XML document and XML Schema")(section 1).

As per claims 29, 35, and 40, Wang teaches a computer-based method, wherein said string_value is any of the following: a type name, element name or attribute name (i.e. "<element name='street' type='xs:string'/>")(see Figure 2).

As per claims 30 and 36, Wang teaches a computer-based method , wherein said index structure is any of the following: hash table, binary tree, or B+ tree (see Figure 9).

As per claim 31 and 41, Wang teaches a computer-based method, wherein said computer-based method is implemented in a database (i.e. "XML Database system")(section 1).

As per claims 32 and 38, Wang does not explicitly teach a computer-based method, wherein said sorting of said typing tuples in said SET by their first field, string_value is based an alphabetical sort.

Bouchou teaches a computer-based method, wherein said sorting of said typing tuples in said SET by their first field, string_value is based an alphabetical sort (see DTD definition)(section 2).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Wang with the teachings of Bouchou to include a computer-based method, wherein said sorting of said typing tuples in said SET by their first field, string_value is based an alphabetical sort with the motivation to efficiently validate an XML document or document fragment against an XML Schema and annotate it with type information (Wang, abstract).

As per claim 37, Wang teaches an article of manufacture , wherein said arranging step is further comprised of: collecting each third field of said typing tuples and sorting said typing tuples in said ambiguity sequence with respect to third field of said typing tuple (see sections 3.5.1 and 3.5.2).

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Farhan M. Syed whose telephone number is 571-272-

7191. The examiner can normally be reached on 8:30AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Christian Chace can be reached on 571-272-4190. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

/FMS

CHRISTIAN CHACE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100